

REMARKS

The Office Action dated February 10, 2006 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1-54 are currently pending in the application. Claims 1, 18, 31, 47, and 50 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added and no new issues are raised which require further consideration or search.

The Office Action indicated that claims 43-46 have been allowed. Applicants wish to thank the Examiner for the allowance of these claims. Therefore, claims 1-42 and 47-54 are respectfully submitted for consideration.

As a preliminary manner, Applicants wish to thank the Examiner for the courtesy extended during the interview conducted on May 16, 2006. Applicants discussed the distinctions between the present invention and the cited art with the Examiner, although no agreement was reached.

Claims 1-9, 18-24, 26, 31-35, 37, 39-42, and 47-53, however, were again rejected under 35 U.S.C. §102(e) as being anticipated by Ahmed (U.S. Patent No. 6,160,804). The rejection is respectfully traversed for the reasons which follow.

Claim 1, upon which claims 2-17 are dependent, recites a method of anchoring an IP flow. The method includes receiving the IP flow of a plurality of IP flows from a mobile node at an attached access router, transferring the IP flow to from the attached

access router an original access router, the original access router maintaining a host table associated with the mobile node, and accessing a server attached to the original access router to service the IP flow. The original access router is a router that the mobile node was attached to prior to the attached access router.

Claim 18, upon which claims 19-30 are dependent, recites a method of anchoring an IP flow. The method includes receiving the IP flow of a plurality of IP flows from a mobile node at an attached access router, and forwarding the IP flow from the attached access router to an original access router. The method further includes transmitting the IP flow to a home agent associated with the mobile node, the home agent maintaining a flow table associated with the mobile node, and forwarding the IP flow to a connecting node. The original access router is a router that the mobile node was attached to prior to the attached access router.

Claim 31, upon which claims 32-38 are dependent, recites a method of anchoring IP flows. The method includes establishing a first flow table at an attached access router identifying an original access router for each IP flow of a plurality of IP flows, receiving an IP flow of the plurality of IP flows at the attached access router from a mobile node, determining the original access router for the IP flow, and forwarding the IP flow from the attached access router to the original access router. The original access router is a router that the mobile node was attached to prior to the attached access router.

Claim 39, upon which claims 40-42 are dependent, recites a method of anchoring IP flows. The method includes the steps of moving a mobile node from an original

access router to an attached access router, notifying a central node of the moving of the mobile node, and notifying the attached access router of an address of the original access router.

Claim 47, upon which claims 48-49 are dependent, recites an apparatus for anchoring an IP flow. The apparatus includes means for receiving the IP flow of a plurality of IP flows from a mobile node at an attached access router, means for transferring the IP flow from the attached access router to an original access router, the original access router maintaining a host table associated with the mobile node, and means for accessing a server attached to the original access router to service the IP flow. The original access router is a router that the mobile node was attached to prior to the attached access router.

Claim 50, upon which claims 51-54 are dependent, recites an apparatus for anchoring an IP flow. The apparatus includes a first access router configured to receive the IP flow of a plurality of IP flows from a mobile node, the mobile node being attached to the first access router. The apparatus further includes a second access router configured to receive the IP flow from the first access router, the second access router further configured to maintain a host table associated with the mobile node. The apparatus also includes a server configured to service the IP flow, the server being attached to the second access router. The second access router is a router that the mobile node was attached to prior to the first access router.

Certain embodiments of the present invention provide methods and apparatuses for maintaining network flows of mobile nodes that are receiving services through an access router, after the mobile nodes change the access router. More particularly, some embodiments of the present invention provide “flow anchoring,” which is a method of transferring all active original network flows from an attached access node to an original access node that the mobile node was attached to prior to changing its point of attachment to the network.

As will be discussed below, Ahmed fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the advantages and features discussed above.

Ahmed discloses a mobility management method for a multimedia mobile network. A first mobile station searches a database for the address of a second mobile station. The address is a combination of an identifier of the second mobile station and an identifier of a network node with which the second mobile station is currently associated. The network node identifiers may be uniquely assigned by a network administrator, while the mobile station identifiers may be set to a universal MAC address assigned to the station. The first mobile station transmits a packet including the address of the second mobile station and an address of the first mobile station. Network nodes in the communications system are not required to obtain additional address information to direct the packet to the second mobile station.

The Office Action appears to take the position that the home agents and foreign agents discussed in Ahmad correspond to the original access router and attached access

router of the present claims (see Office Action, page 2, lines 13-17). Applicants respectfully disagree. Specifically, Applicants respectfully submit that Ahmed does not disclose or suggest “transferring the IP flow from the attached access router to an original access router, the original access router maintaining a host table associated with the mobile node,” and “wherein the original access router is a router that the mobile node was attached to prior to the attached access router,” as recited in claim 1 and similarly recited in claims 18, 31, 47, and 50.

As recited in the claims, and supported by the specification, according to certain embodiments of the invention a mobile node is wirelessly attached to an access router, which in turn is attached to a server. The mobile node can initiate a flow which requires servicing by the server, and, as a result, the access router will first route the flow through the server before forwarding to it to the internet. However, when the mobile node moves and utilizes a new access router to access the internet, the flow will be routed by the new access router to the old access router in order to ensure that it receives the same service (Specification, page 12, paragraph 0042-0043 and Figure 1).

Ahmad, on the other hand, does not appear to disclose or suggest that a flow initiated by the mobile station is routed by the home agent to the foreign agent, where the foreign agent was the node servicing the mobile station before it moved. Rather, Ahmad discloses that a home agent is a router that authenticates a mobile node, tracks a mobile nodes location, and redirects the packets to the mobile node’s current location. More specifically, the home agent receives packets destined to the home address of the mobile

station and tunnels them to the care-of-address of the mobile node by encapsulating the original IP packets in new IP packets with the destination address set to the mobile node's care-of-address (Ahmed, Column 2, 52 – Column 3, line 8). Ahmed does not utilize or forward packets to the original access router, as recited in the present claims. Further, according to Ahmed, a flow is not directed to the original access router which maintains a host associated with the mobile node, as recited in the present claims.

As such, Applicants respectfully submit that Ahmed fails to disclose or suggest “transferring the IP flow from an attached access router to an original access router, the original access router maintaining a host table associated with the mobile node,” and “the original access router is a router that the mobile node was attached to prior to the attached access router,” as recited in claims 1, 47, and 50. Similarly, Ahmed does not disclose or suggest “forwarding the IP flow from the attached access router to an original access router,” as recited in claims 18 and 31. Nor does Ahmed disclose or suggest “notifying the attached access router of an address of the original access router,” as recited in claim 39. Therefore, Ahmed fails to disclose or suggest all of the elements of the claims. As such, for at least the reasons discussed above, Applicants respectfully request that the rejection of claims 1, 18, 31, 39, 47, and 50 be withdrawn.

Claims 2-9, 19-24, 26, 32-35, 37, 40-42, 48-49, and 51-53 are dependent upon claims 1, 18, 31, 39, 47, and 50, respectively. Accordingly, claims 2-9, 19-24, 26, 32-35, 37, 40-42, 48-49, and 51-53 should be allowed for at least their dependence upon claims 1, 18, 31, 39, 47, and 50, and for the specific limitations recited therein.

Claims 10-17, 25, 27-30, 36, 38 and 54 were again rejected under 35 U.S.C. §103(a) as being unpatentable over Ahmed in view of Brothers (U.S. Patent No. 6,822,955). The Office Action took the position that Ahmed discloses all of the elements of the claims, with the exception of the server or access router running network address translation (NAT). The Office Action then relies upon Brothers as allegedly curing this deficiency in Ahmed. The rejection is respectfully traversed for the reasons which follow.

Ahmed is discussed above. Brothers discloses a system and method for transparent IP mobility services for clients in a dynamic LAN Ethernet environment. Communications between a device in a first network and a destination device having an arbitrary address on a second network outside of the first network is established. An address resolution protocol packet is generated to identify the arbitrary address for the destination device. The proxy server receives the address resolution protocol packet and generates an address resolution protocol response packet including the arbitrary address of the destination device. The address resolution protocol response packet is transmitted from the proxy server to the device in the first network.

We note that claims 10-17, 25, 27-30, 36, 38 and 54 are dependent upon claims 1, 18, 31, and 50, respectively. As discussed above, Ahmed does not disclose or suggest all of the elements of claims 1, 18, 31, and 50. Furthermore, Brothers fails to cure these deficiencies in Ahmed. Consequently, Applicants submit that claims 10-17, 25, 27-30,

36, 38 and 54 should be allowed for at least their dependence upon claims 1, 18, 31, and 50, and for the specific limitations recited therein.

Applicants respectfully submit that the cited prior art fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-54 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Petition for Extension of Time